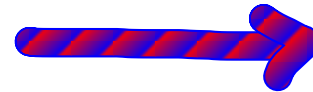


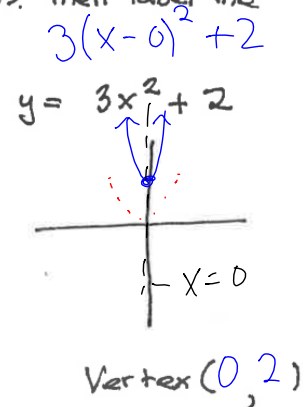
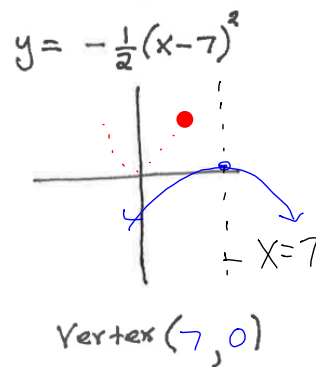
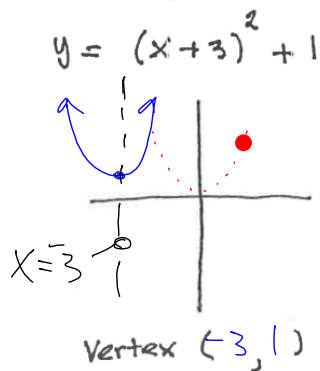
HW tally



Then Pick up and do the Warm Up
(both sides)

LCQ (no calculator) later today

Without a GDC sketch the following parabolas. Then label the vertex. $y = x^2$ is already shown.



$y = x^2$

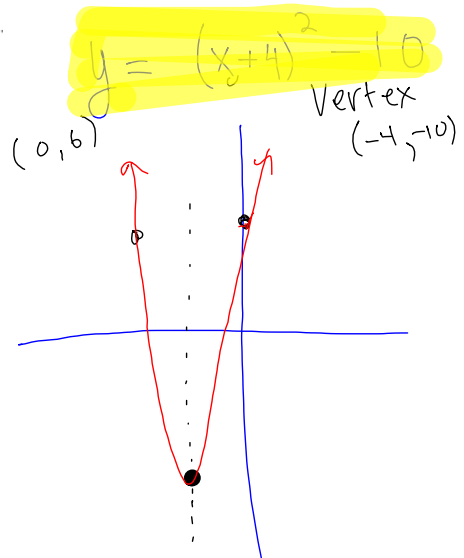
2. Go back ^{to #1} and, with a dashed line, draw the line of symmetry and label with its equation.

3. Convert the following to graphing form

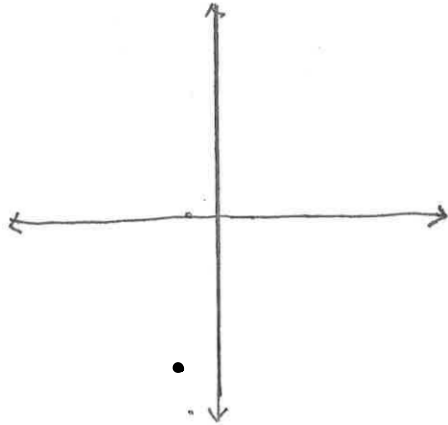
$$y = x^2 + 8x + 6$$

$$y + 16 = \begin{array}{|c|c|} \hline x & 4 \\ \hline X^2 & 4x \\ \hline 4x & 16 \\ \hline \end{array} + 6$$

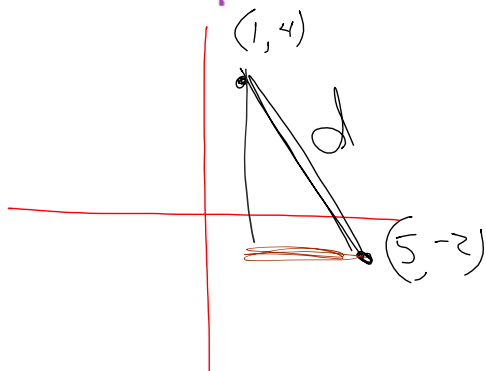
$$y + 16 = (x + 4)^2 - 16 + 6$$



4. Now make a sketch of the graph below. Be sure to figure out the y-intercept to help you.



- ④ Find the distance between the two points $(\underline{5}, -2)$ and $(\underline{-1}, 4)$



$$d^2 = (x-x)^2 + (\quad)^2$$

$$d^2 = (5-(-1))^2 + (-2-4)^2$$

$$d^2 = 16 + 36$$

$$d^2 = 52$$

$$d = \sqrt{52}$$

$$y = x^2 + 2x + 4$$

$$0 = x^2 + 2x + 4$$

doesn't factor

Use QF.

$$a = 1$$

$$b = 2$$

$$c = 4$$

$$x = \frac{-2 \pm \sqrt{(2)^2 - 4(1)(4)}}{2(1)} = \frac{-2 \pm \sqrt{-12}}{2}$$

You will
check your HW
Monday.

Protocol when checking HW

Keep your HW out so, if I walk around, I can look at it.

If you did not do it, I expect to see a **O** written on your recording sheet before I get to your desk.

Any questions on HW ?

50 a

50 c

50 d

$$y = x^2 + 7x - 2$$

Convert to
graphing
form
(complete
square)

53

 $(-2, 4)$ $(4, 7)$

equation

 $d =$ ~~54~~

$$4x^3 + 23x^2 - 2x = 0$$

$$x(4x^2 + 23x - 2) = 0$$

↓

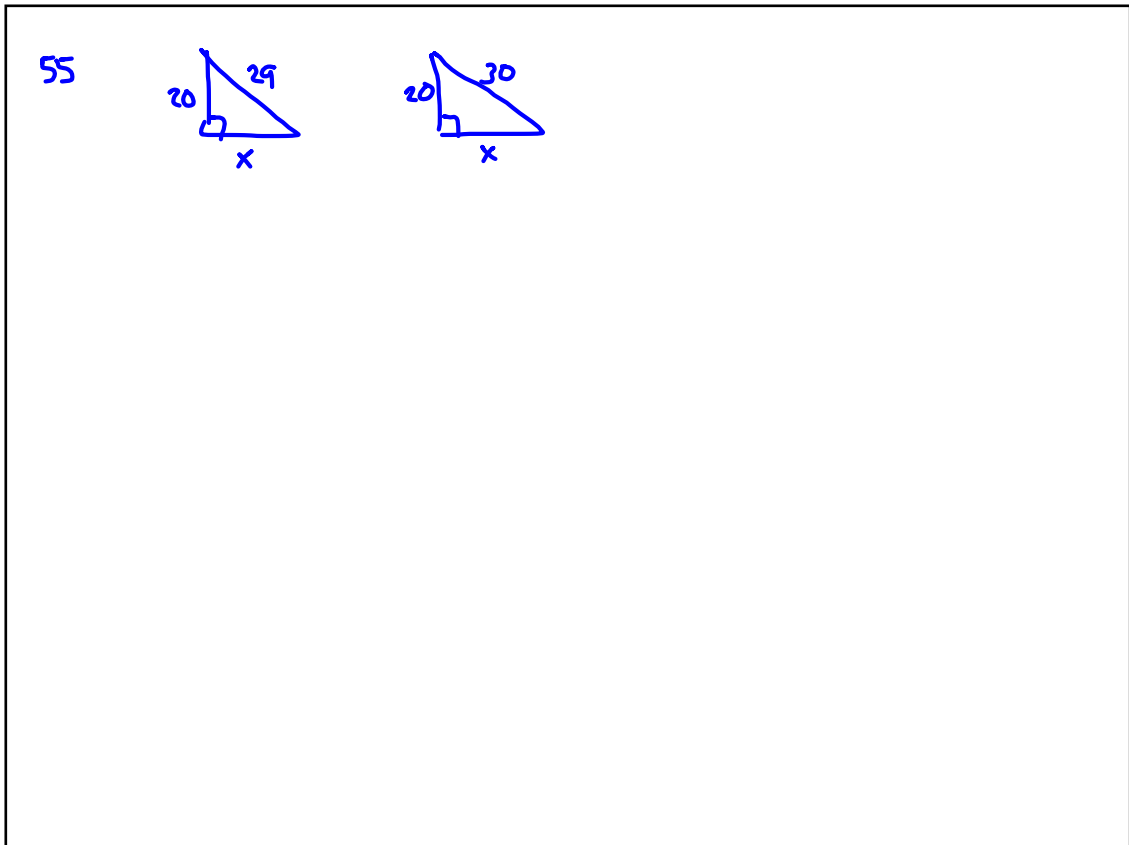
$$4x^2 + 23x - 2 = 0$$

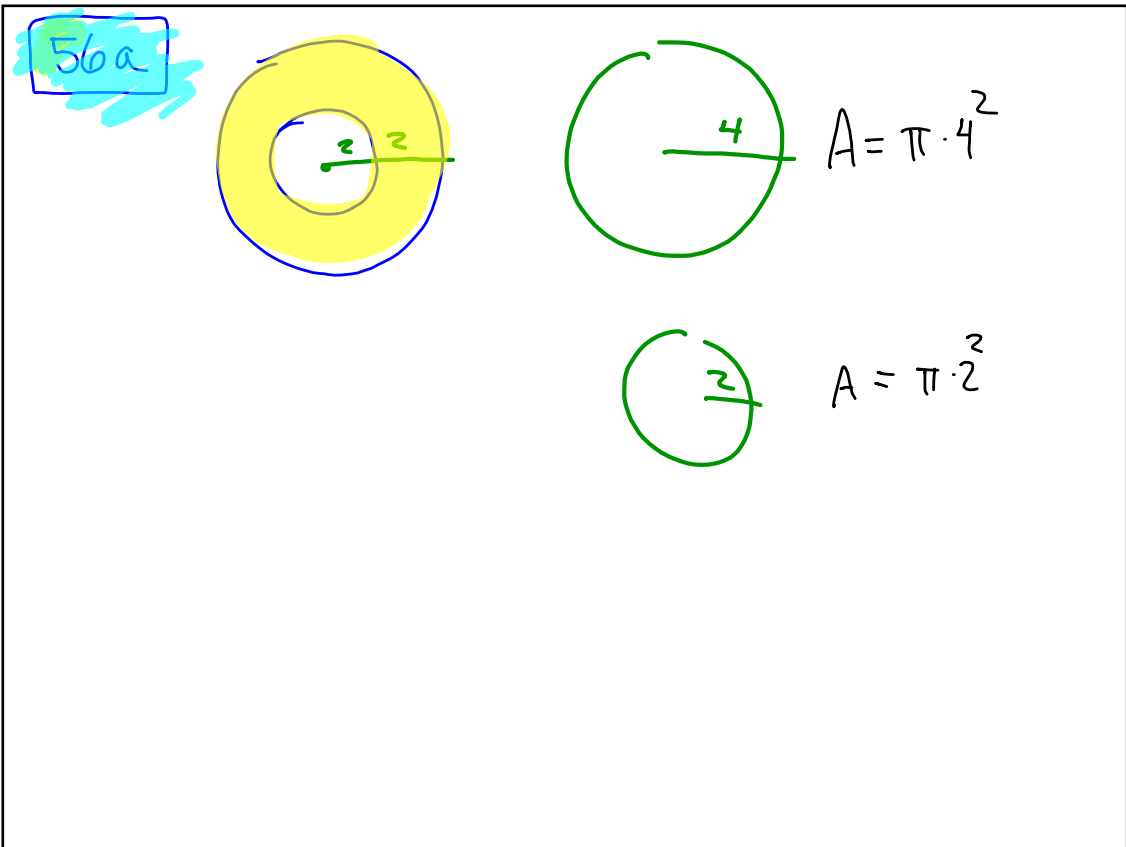
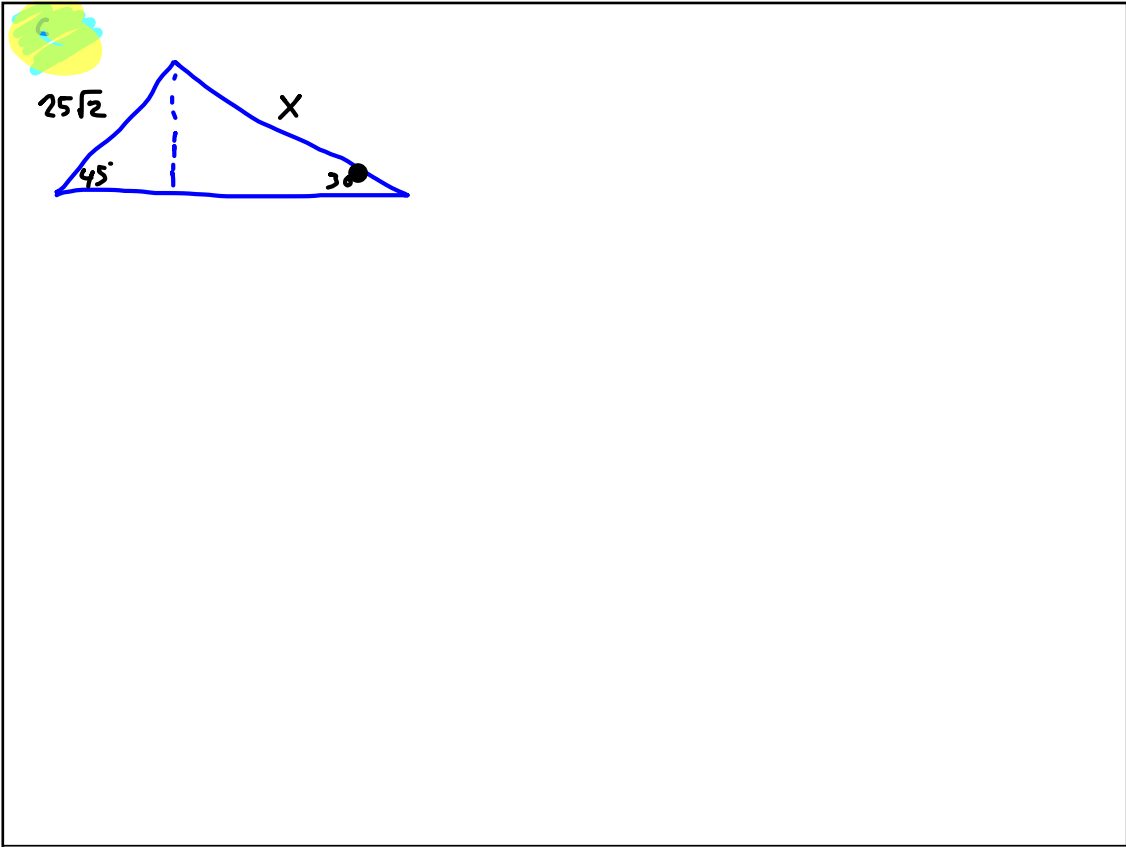
$$a = 4$$

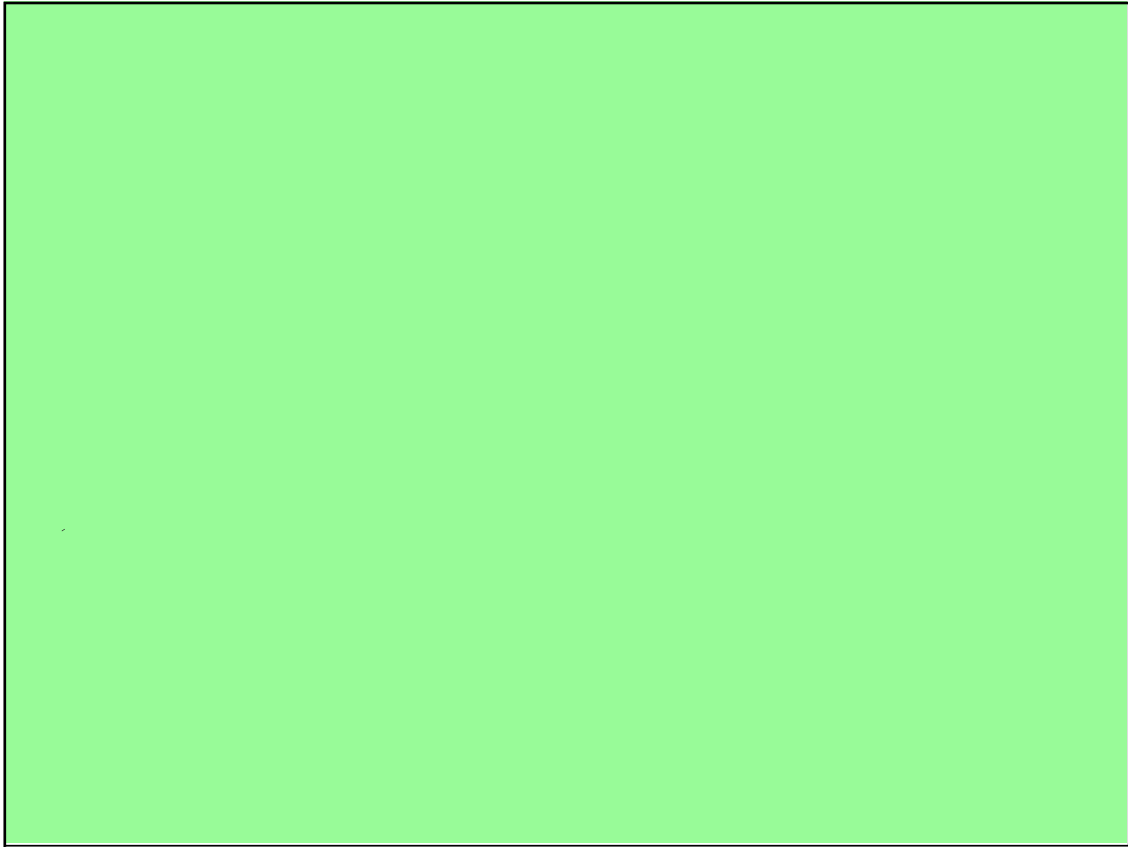
$$b = 23$$

$$c = -2$$

$$X = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$





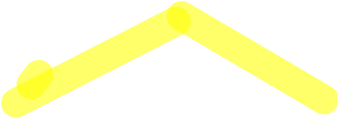


So, far we have two ways of
starting from standard form

$$f(x) = ax^2 + bx + c$$

and converting to graphing form

$$f(x) = a(x-h)^2 + k$$



Finding the
x-intercepts
and averaging
them

complete the
Square to
Convert

Aim Today •

Deal with variations
of both methods

NOTES: Convert $y = x^2 + 5x + 2$

$$y + 6.25 = \begin{array}{|c|c|} \hline x^2 & 2.5x \\ \hline 2.5x & 6.25 \\ \hline \end{array} + 2$$

$$y + 6.25 = (x + 2.5)^2 + 2$$

-6.25 -6.25

$$y = (x + 2.5)^2 - 4.25$$

Vertex $(-2.5, -4.25)$
 $y(0, 2)$

Complete the Square when $a \neq 1$

$$y = 2x^2 - 16x + 5$$

must have $a=1$ to complete the square
 divide by 2

$$\frac{y}{2} = x^2 - 8x + \frac{5}{2}$$

$$\frac{y}{2} + 16 = \begin{array}{|c|c|} \hline x^2 & -4x \\ \hline -4x & 16 \\ \hline \end{array} + \frac{5}{2}$$

$$\frac{y}{2} + 16 = (x - 4)^2 + \frac{5}{2}$$

multiply by 2

$$y + 32 = 2(x - 4)^2 + 5$$

-32 -32

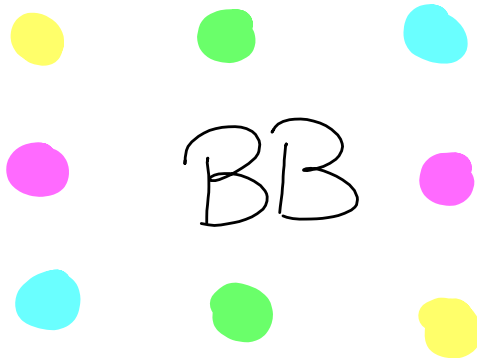
$$y = 2(x - 4)^2 - 27$$

$$y = 2x^2 - 16x + 5$$

$$y = 2(x^2 - 8x) + 5$$

$$y + 32 = 2(x^2 - 8x + 16) + 5$$

x^2	$-4x$
$-4x$	16

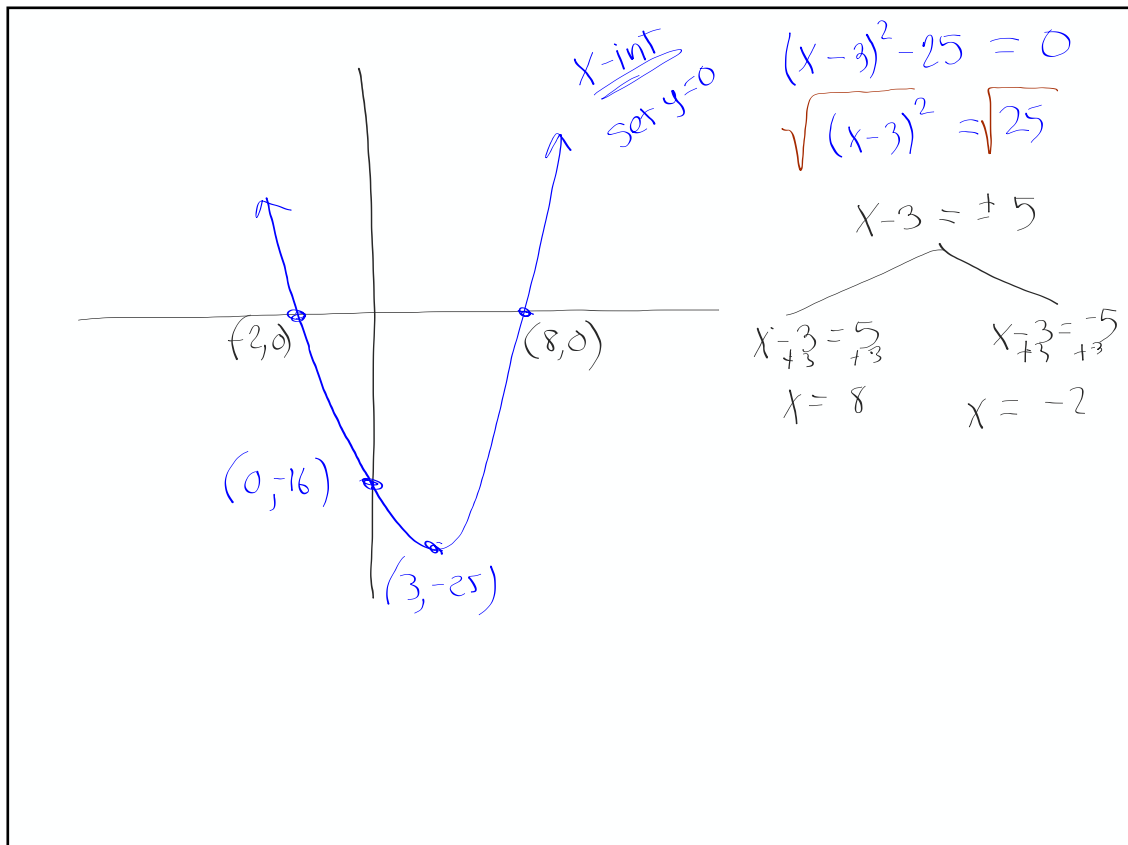
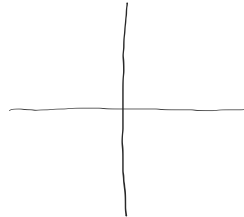


New function $y = (x-3)^2 - 25$

Without a GDC:

a) Find the vertex , sketch and label its graphs

b) Find all exact x-intercepts but don't get too
far



X-intercepts
algebraically

$$y = (x-3)^2 - 25$$

$$0 = (x-3)^2 - 25$$

did anyone

$$0 = (x-3)(x-3) - 25$$

$$0 = x^2 - 3x - 3x + 9 - 25$$

$$0 = x^2 - 6x - 16$$

etc

Instead...

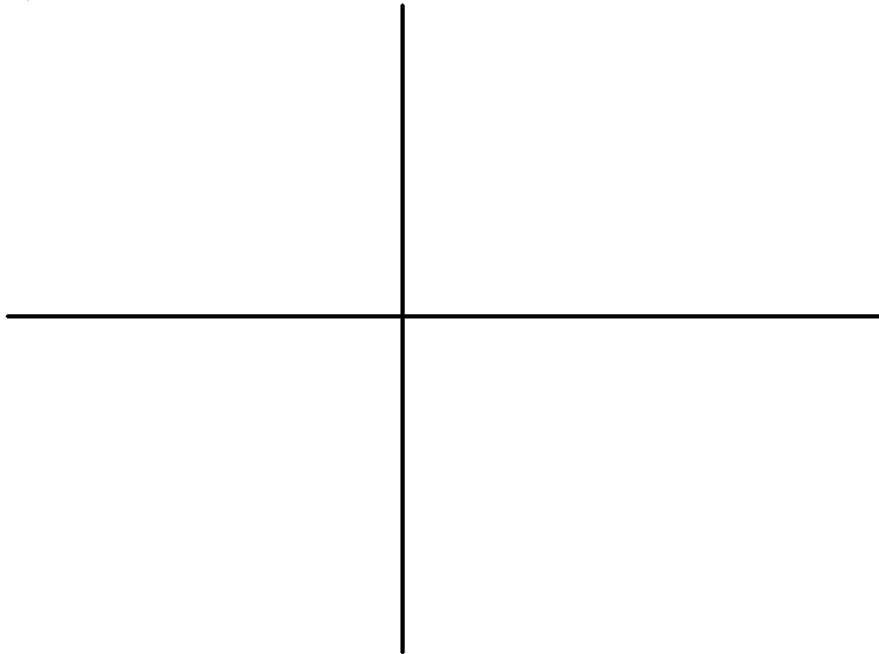
$$0 = (x-3)^2 - 25$$

Make a sketch and
label with exact
x- and y-intercepts

$$y = (x+5)^2 - 8$$

y-int $(0, -16)$

Vertex $(-5, -8)$



LCQ

Assignment

2-... 50bd , 59-63

